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10/717,736	11/20/2003	Scott E. Black	BO1 - 0019US	8708
60483 7590 04/21/2008				
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LAU, TUNG S				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/717,736

Applicant(s)

BLACK ET AL.

Examiner

TUNG S. LAU

Art Unit

2863

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 March 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) 18-23 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/CDC)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____
- Paper No(s)/Mail Date _____

DETAILED ACTION

Election/Restrictions

1. Claims 18-23 stand withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention as noted on 05/18/2006.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 16, 17, 14, and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Raymond J. Anderson, McDonnell Douglas Corporation, St. Louis (Lab testing of neural networks for improving aircraft onboard-diagnostics on flight-ready hardware, processing Annual Reliability and Maintainability Symposium 1993, 0149.144X/93, IEEE 1993, page 404-410).

Regarding claim 1:

Raymond J. Anderson describes a method of operating a product, comprising: monitoring a first diagnostic information of a component of the product (fig. 3, relay 1); monitoring a second diagnostic information of a system of the product (fig. 3, relay 2), the system including the component wherein the second diagnostic information does not include the first diagnostic information (fig. 3,

relay 1 and 2 are separate); combining the first diagnostic information of the component and the second diagnostic information of the system (fig. 3, different layer); reconfiguring at least one of the component and the system to compensate during a flight if the combined first and second diagnostic information indicates a degradation of the component (page 404).

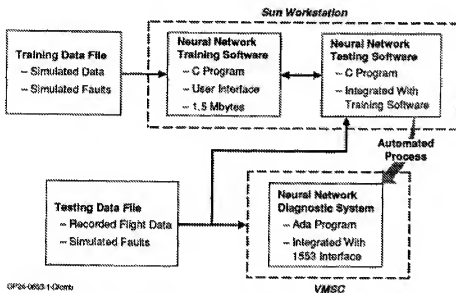


Figure 1. Neural Network Development and Delivery Environment

Regarding claim 2, Raymond J. Anderson further describes monitoring a first diagnostic information of a component includes monitoring a health indication of the component (page 404).

Regarding claim 3, Raymond J. Anderson further describes monitoring a first diagnostic information of a component includes monitoring a capability indication of the component (page 404).

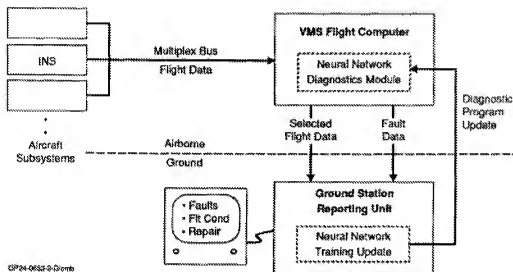


Figure 2. Vehicle Management System: NN Fault Diagnostics Demonstration

Regarding claim 4, Raymond J. Anderson further describes monitoring a first diagnostic information of a component includes monitoring a reliability indication of the component (page 404).

Regarding claim 5, Raymond J. Anderson further describes monitoring a information of a component includes monitoring a first diagnostic information of an actuator (page 407).

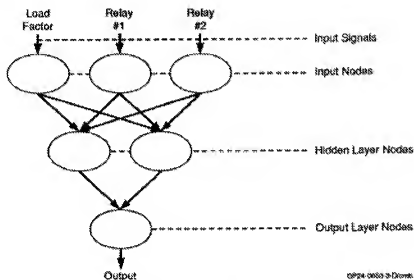


Figure 3. Hierarchical Structure of Backpropagation Network

Each Node in Network Performs Simple Processing and Then Passes its Information on to Other Nodes

Regarding claim 6, Raymond J. Anderson further describes monitoring a second diagnostic information of a system includes monitoring a health indication of the system (page 404).

Regarding claim 7, Raymond J. Anderson further describes monitoring a second diagnostic information of a component includes monitoring a capability indication of the component (page 407).

Regarding claim 8, Raymond J. Anderson further describes monitoring a second diagnostic information of a component includes monitoring a reliability indication of the component (page 404).

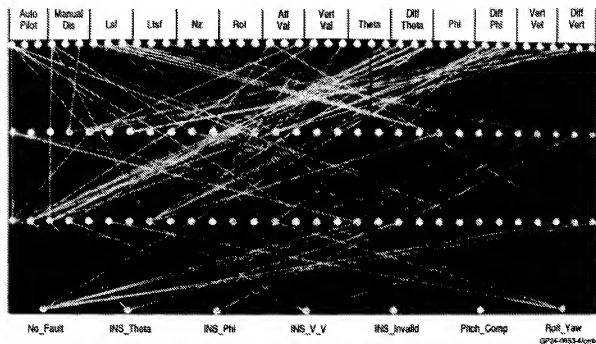


Figure 4. Neural Network for Fault Diagnostics of the F-15 Inertial Navigation System

Regarding claim 9, Raymond J. Anderson further describes monitoring a second diagnostic information of a system includes monitoring a second diagnostic information of a flight control system (page 404).

Regarding claim 10, Raymond J. Anderson further describes reconfiguring at least one of the component and the system includes reconfiguring a flight control system to take into account a degradation of an actuator (page 404, 407).

Regarding claim 11, Raymond J. Anderson further describes feeding back the reconfiguring of the at least one of the component and the system into the fusion of the first and second diagnostic information (fig. 1, unit 8).

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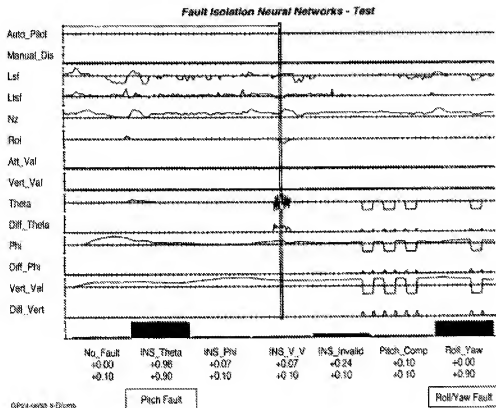


Figure 5. Fault Isolation of Multiple Faults Using Flight Data Parameters

Regarding claim 12, Raymond J. Anderson further describes inputting the combined first and second diagnostic information into a maintenance support block (page 404).

Regarding claim 13, Raymond J. Anderson further describes inputting the combined first and second diagnostic information into a maintenance support block includes inputting the combined first and second diagnostic information into the maintenance support block to at least one of enable post-flight analysis and

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interpretation, and assist in assessing the prognosis of the component and system (page 404, 405).

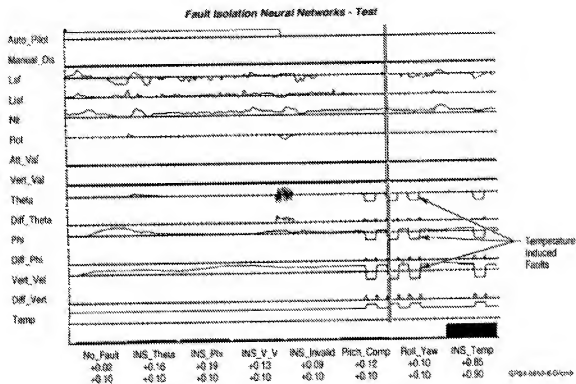


Figure 5 In Field Learning for Diagnostics of INS Temperature Related Faults

Regarding claim 16, Raymond J. Anderson further describes reconfiguring at least one of the component and the system includes reconfiguring at least one of the component and the system using an integrated vehicle health management system (page 404, 405, fig. 6).

Regarding claim 17, Raymond J. Anderson further describes integrating an integrated vehicle health management system will reconfigurable control (page

404), and performing tests of at least one of the component and the system during actual operation of the product (page 404).

Regarding claim 14, Raymond J. Anderson further describes detecting a level of degradation of the component that can be used to reduce false alarms in a Built-In Test system (page 404).

Regarding claim 15, Raymond J. Anderson further describes trending one or more degradations to provide a prognostic capability (page 405, 406).

Response to Arguments

3. Applicant's arguments filed 03/11/2008 have been fully considered but they are not persuasive.

A. Applicant argues in the arguments that the prior art does not show the "monitoring a second diagnostic information of a system of the product, the system, including the component, wherein the second diagnostic information does not include the first diagnostic information." (Remarks page 6)

Raymond J. Anderson further describes if a high acceleration load factor present when Realy #1 triggers, a relationship is establish in the output signal and this is valuable to diagnostic of system function (page 406, left column lines 8-13), Raymond J. Anderson further describes a change in any of these input pattern will quickly result in a change result in a change in the output signal relationship

(page 406, right column, lines 12-14), some of these changes have more weight than others (page 406, right column, lines 8-9).

In view of the description of the invention seems to be that **1.** the input signal (acceleration factor, Relay #1, Relay # 2) can change and condition of the output will change, and **2.** when some of the input condition changes (acceleration factor, Relay #1, Relay # 2) while other input signal stay the same (acceleration factor, Relay #1, Relay # 2), the output will change accordingly (and so the output has less weight as Raymond J. Anderson describes).

if a high acceleration load factor present when Realy #1 triggers, a relationship is establish in the output signal and this is valuable to diagnostic of system function, means **1.** a high acceleration load factor present when Realy #1 triggers, a relationship is establish in the output signal and this is valuable to diagnostic of system function, or **2.** a high acceleration load factor not present when Realy #1 triggers, a relationship is establish in the output signal and this is valuable to diagnostic of system function. The second condition reads on to "monitoring a second diagnostic information of a system of the product, the system, including the component, wherein the second diagnostic information does not include the first diagnostic information."

When there are changes in all the input (acceleration factor, Relay #1, Relay # 2) the output changes or **2.** when the are less change in the input signal ie. Some change some does/do not change (acceleration factor, Relay #1, Relay # 2), the output still changes to match the system changes (page 406, right column, lines

12-14). The second condition reads on to "monitoring a second diagnostic information of a system of the product, the system, including the component, wherein the second diagnostic information does not include the first diagnostic information."

The input condition (this case are 2,370 type of input (page 406, right column, lines 10)) are monitor every 10ms (page 406, right column, lines 6-7), in reality of the practical application on an airplane some of the input will change and some of the input will not change in 10 ms. When the condition do/does not change, it reads on to "the second diagnostic information does not include the first diagnostic information."

Raymond J. Anderson further description of the invention reads on to "monitoring a second diagnostic information of a system of the product, the system, including the component, wherein the second diagnostic information does not include the first diagnostic information." In fig. 3, unit load factor, relay #1, relay 32.. etc. and page 406.

Reminds the applicants that while the meaning of claims of issued patents are interpreted in light of the specification, prosecution history, prior art and other claims, this is not the mode of claim interpretation to be applied during examination. During examination, the claims must be interpreted as broadly as their terms reasonably allowed. This means that the words of the claim must be given their plain meaning unless applicant has provided a clear definition in the specification. In re Zletz, 893 F.2d 319, 321, 13 USPQ2d 1320, 1322 (Fed. Cir.

1989). In this case, the examiner has interpreted as broadly as their terms reasonably allowed and is proper (In re Zletz, 893 F.2d 319, 321, 13 USPQ2d 1320, 1322 (Fed. Cir. 1989))

Words in patent claims are given their ordinary meaning in the usage of the field of the invention, unless the text of the patent makes clear that a word was used with a special meaning; Phillips v. AWH Corp., *415 F.3d 1303, 1313<, 75 USPQ2d 1321>, 1326< (Fed. Cir. 2005) (en banc).

Sunrace Roots Enter. Co. v. SRAM Corp., 336 F.3d 1298, 1302, 67 USPQ2d 1438, 1441 (Fed. Cir. 2003); Brookhill-Wilk 1, LLC v. Intuitive Surgical, Inc., 334 F.3d 1294, 1298 67 USPQ2d 1132, 1136 (Fed. Cir. 2003), and where an explicit definition is provided by the applicant for a term, that definition will control interpretation of the term as it is used in the claim. Toro Co. v. White Consolidated Industries Inc., 199 F.3d 1295, 1301, 53 USPQ2d 1065, 1069 (Fed. Cir. 1999), See MPEP 2111 [R-5](III). In this case the ordinary meaning in view of the field of the invention did apply and appears proper under current PTO practice.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory

action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Contact information

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tung S. Lau whose telephone number is 571-272-2274. The examiner can normally be reached on M-F 9-5:30. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Barlow can be reached on 571-272-2269. The fax phone numbers for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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/Tung S. Lau/

Tung S. Lau, Art Unit 2863

Primary Examiner

April 17, 2008